

SAMPLE CONTENT

HOLISTIC



MHT-CET

ROADMAP TO SUCCESS

2024



- Based on latest paper pattern
- Quick Review
- Subtopic wise segregation

- Classwork/Homework segregation
- Previous Years' Questions

BIOLOGY (STD.XII)

Target Publications® Pvt. Ltd.

HOLISTIC

MHT-CET

BIOLOGY

MULTIPLE CHOICE
QUESTIONS

Based on Std. XII Syllabus of MHT-CET

*Scan the adjacent QR code to download Solutions of
Classwork, Homework & Previous Years' Questions.*



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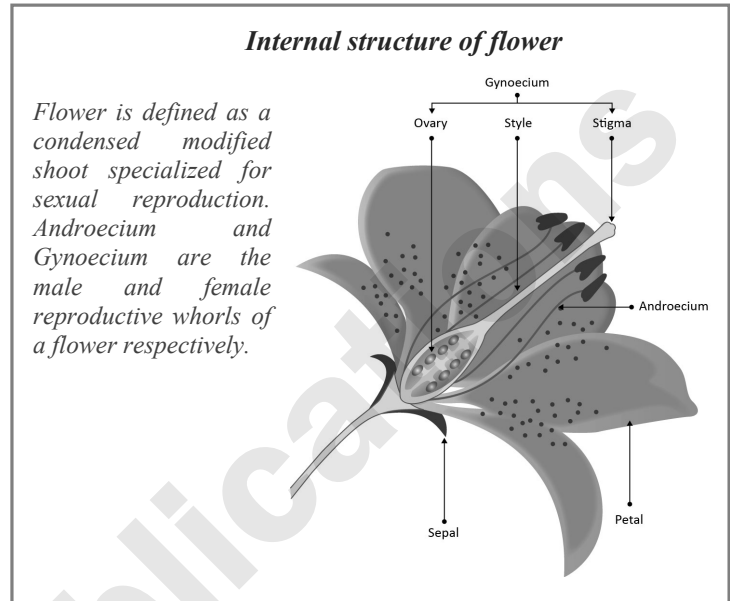
CONTENTS

Textbook Chapter No.	Chapter Name	Page No.
1	Reproduction in Lower and Higher Plants	1
2	Reproduction in Lower and Higher Animals	20
3	Inheritance and Variation	41
4	Molecular Basis of Inheritance	60
5	Origin and Evolution of Life	80
6	Plant Water Relation	95
7	Plant Growth and Mineral Nutrition	108
8	Respiration and Circulation	119
9	Control and Co-ordination	137
10	Human Health and Diseases	154
11	Enhancement of Food Productions	166
12	Biotechnology	183
13	Organisms and Population	197
14	Ecosystem and Energy Flow	205
15	Biodiversity, Conservation and Environmental Issues	214

Reproduction in Lower and Higher Plants

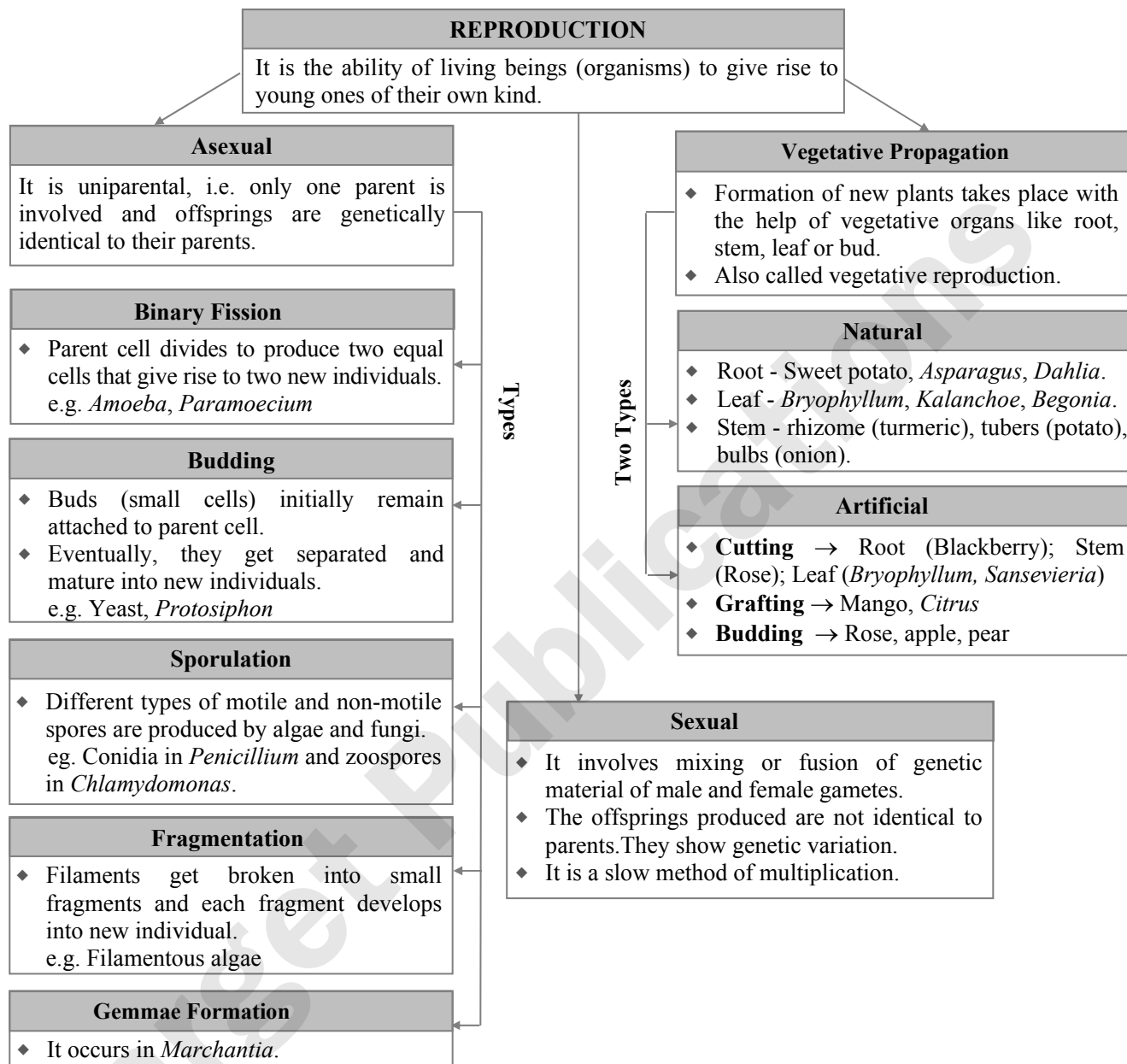
Subtopics

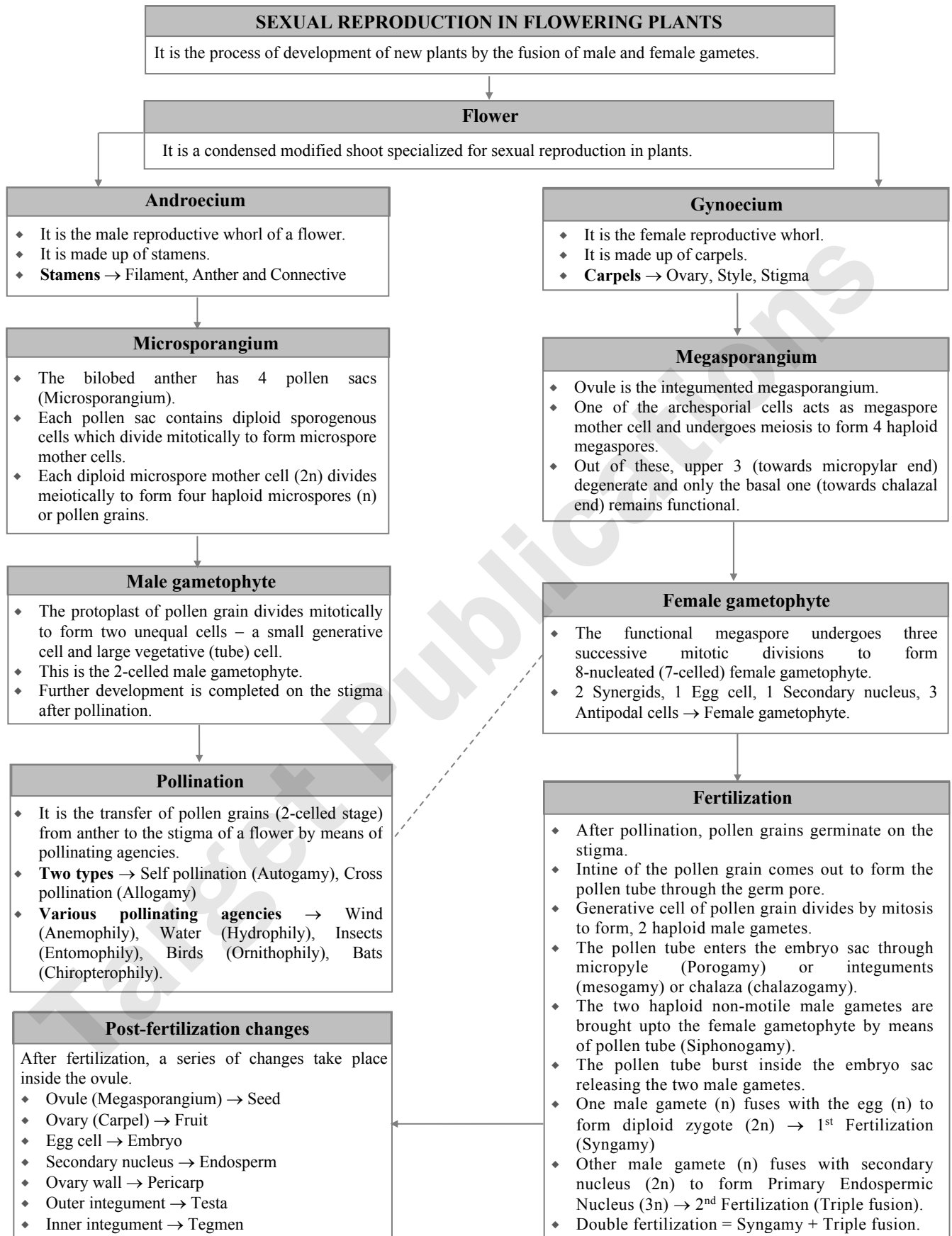
- 1.1 Asexual Reproduction
- 1.2 Sexual Reproduction
- 1.3 Microsporogenesis
- 1.4 Structure of Anotropous Ovule
- 1.5 Megasporogenesis
- 1.6 Pollination
- 1.7 Outbreeding Devices (Contrivances)
- 1.8 Pollen-Pistil Interaction
- 1.9 Double Fertilization
- 1.10 Development of Endosperm
- 1.11 Development of Embryo
- 1.12 Seed and Fruit Development
- 1.13 Apomixis
- 1.14 Parthenocarpy
- 1.15 Polyembryony





Quick Review







Types of endosperm

Nuclear Cellular Helobial

Types of Seeds

Endospermic/ Albuminous
e.g. Caster, Coconut, Maize

Non-endospermic/ Ex-albuminous
e.g. Pea, bean

Apomixis

Formation of embryo(s)
through asexual method of reproduction

Categories

Recurrent Non-recurrent Adventive
Embryony

Parthenocarpy

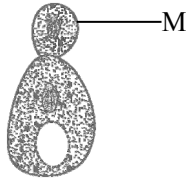
Fruits develop without fertilization

Polyembryony

Development of more than one embryos in seed

Classwork

1.1 Asexual Reproduction

- Motile zoospores are produced by
[MHT CET 2017]
(A) *Chlamydomonas* (B) *Penicillium*
(C) Bacteria (D) *Amoeba*
 - Identify the asexual reproductive structure 'M' in the following diagram.
(A) Zoospore
(B) Bud
(C) Gemmule
(D) Conidium
- 
- Which one of the following plants reproduces vegetatively by epiphyllous buds?
[MHT CET 2017]
(A) Sweet potato (B) Potato
(C) Onion (D) *Kalanchoe*
 - Stock and scion are used in
(A) cutting
(B) grafting
(C) layering
(D) micropropagation

- Cambium is essential for grafting in plants because
[MHT CET 2018]
(A) cambia of both stock and scion fuse together
(B) cambium produces new leaves
(C) cambium produces new roots
(D) cambium helps in the production of flowers
- _____ is the most convenient and cheap method of artificial vegetative propagation.
[MHT CET 2016]
(A) Grafting
(B) Budding
(C) Cutting
(D) Micropropagation
- Which one of the following is NOT true about vegetative propagation?
[MHT CET 2018]
(A) Easy and cheaper method
(B) Rapid propagation
(C) Production of genetically similar plants
(D) Production of genetically dissimilar plants
- Which one of the following is NOT a natural method of vegetative propagation?
[MH CET 2015]
(A) runner (B) foliar buds
(C) stem tuber (D) grafting



9. Considering mode of asexual reproduction, match the Column I with II and select the correct option:

	Column I		Column II
i.	Yeast	a.	fragmentation
ii.	<i>Penicillium</i>	b.	zoospores
iii.	Filamentous algae	c.	budding
iv.	<i>Chlamydomonas</i>	d.	conidia

[MH CET 2015]

- (A) i – c, ii – d, iii – a, iv – b
(B) i – b, ii – c, iii – a, iv – d
(C) i – d, ii – c, iii – b, iv – a
(D) i – c, ii – b, iii – a, iv – d

1.2 Sexual reproduction

10. Which of the following wall layer of anther shows fibrous thickenings of callose?

[MHT CET 2016]

- (A) Epidermis (B) Tapetum
(C) Middle layer (D) Endothecium

11. Pollen grain develops from _____ of anther.

[MH CET 2015]

- (A) epidermis
(B) endothecium
(C) tapetum
(D) sporogenous tissue

1.3 Microsporogenesis

12. The wall of pollen tube is made up of

[MHT CET 2016]

- (A) Cellulose and Pectin
(B) Only sporopollenin
(C) Lignin and Pectin
(D) Pectin and Sporopollenin

13. The germ pores in the pollen grain are the regions _____.

- (A) which are made up of lignin and suberin
(B) that can withstand high temperature and strong acids and alkalis
(C) which lack sporopollenin
(D) through which sperms are released into the female gametophyte

14. The exine of pollen grain is made up of

[MHT CET 2018]

- (A) chitin (B) cellulose
(C) sporopollenin (D) hemicellulose

15. Which of the following has proved helpful in preserving pollen as fossils?

- (A) Oil content
(B) Cellulosic intine
(C) Pollenkitt
(D) Sporopollenin

16. Which one of the following statements is NOT true?

- (A) Pollen grains of many species cause severe allergies.
(B) Stored pollen in liquid nitrogen can be used in the crop breeding programmes.
(C) Tapetum helps in the dehiscence of anther.
(D) Exine of pollen grains is made up of sporopollenin.

17. In angiosperms, a male gametophyte is developed from a pollen mother cell by _____.

[MHT CET 2019]

- (A) one meiotic and two mitotic divisions
(B) two mitotic divisions
(C) one mitotic and two meiotic divisions
(D) a single meiotic division

18. The development of male gametes in the pollen grains in angiosperms involves _____.

[MHT CET 2018]

- (A) only one mitotic division
(B) two mitotic divisions
(C) both mitotic and meiotic divisions
(D) only one meiotic divisions

19. Among the following statements related to pollens, choose the correct one.

Statement I: In 40% of angiosperms pollen grains are shed at 3-celled stage.

Statement II: Intine is made of cellulose and pectin and it is discontinuous with germ pores.

- (A) Statement I is correct.
(B) Statement II is correct.
(C) Both statement I and statement II are correct.
(D) Both statement I and statement II are incorrect.

20. If there are 1280 microspores in a tetralocular anther, how many microspore mother cells will be there in its each pollen chamber?

[MH CET 2015]

- (A) 80 (B) 160
(C) 240 (D) 1280

21. A total of 168 pollen grains with 14 chromosomes in each pollen grain are released from a mature microsporangium. Mention the correct ratio of pollen mother cells, generative cells, vegetative cells and male gametes produced by the microsporangium.

- (A) 1:1:1:4 (B) 1:2:1:4
(C) 1:4:4:8 (D) 2:1:1:4



1.4 Structure of Anotropous Ovule

22. The ovule of an angiosperm is technically equivalent to
 (A) megaspore
 (B) megasporangium
 (C) megasporophyll
 (D) megaspore mother cell
23. The body of the ovule is fused within the funicle at:
 (A) Micropyle (B) Nucellus
 (C) Chalaza (D) Hilum
24. **Assertion (A):** Cellular thickenings at the micropylar tip guide the pollen tubes into the synergids.
Reason (R): Synergids have antipodals located at the chalazal end.
 Which of the following is true?
 (A) Both (A) and (R) are true and (R) is the correct explanation of (A).
 (B) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
 (C) (A) is true, but (R) is false.
 (D) (A) is false, but (R) is true.
25. The number of synergids and antipodals present in a typical angiosperm embryo sac at maturity respectively are
 (A) two and three
 (B) one and three
 (C) three and two
 (D) one and two
26. Which of the following in embryo sac of angiosperms shows filiform apparatus?
[MHT CET 2016]
 (A) Antipodals (B) Polar nuclei
 (C) Egg (D) Synergids
27. Egg in female gametophyte is accompanied by
 (A) Antipodal cells
 (B) Synergids
 (C) Definitive nucleus
 (D) Tube nucleus

1.5 Megasporogenesis

28. Which of the following is the first cell of female gametophytic generation in angiosperms?
[MHT CET 2016]
 (A) Megaspore mother cell
 (B) Microspore mother cell
 (C) Functional megaspore
 (D) Egg cell
29. Functional megaspore in an angiosperm develops into
 (A) ovule (B) endosperm
 (C) embryo sac (D) embryo

30. In angiosperms, megaspores formed after meiosis of megaspore mother cell are arranged in _____ **[MHT CET 2016]**
 (A) Isobilateral tetrad (B) Linear tetrad
 (C) Tetrahedral tetrad (D) T-shaped tetrad
31. Which is the most common type of embryo sac in angiosperms?
 (A) Bisporic with two sequential mitotic divisions
 (B) Tetrasporic with one mitotic stage of divisions
 (C) Monosporic with three sequential mitotic divisions
 (D) Monosporic with two sequential mitotic divisions
32. A typical embryo sac at maturity is
 (A) 7 nucleated, 8 celled
 (B) 8 nucleated, 7 celled
 (C) 8 nucleated, 8 celled
 (D) 7 nucleated, 7 celled
33. A typical angiosperm embryo sac at maturity is:
 (A) 8-nucleate and 8-celled
 (B) 8-nucleate and 7-celled
 (C) 7-nucleate and 8-celled
 (D) 7-nucleate and 7-celled

1.6 Pollination

34. Environmental biotic factor that helps in pollination is **[MH CET 2015]**
 (A) air (B) water
 (C) wind (D) insects
35. Which of the following is INCORRECT for wind-pollinated plants?
 (A) Many ovules in each ovary.
 (B) Flowers are small and not brightly coloured.
 (C) Pollen grains are light and non-sticky.
 (D) Well exposed stamens and stigma.
36. Self-pollination which involves two different flowers of the same plant, is called **[MH CET 2015]**
 (A) autogamy (B) geitonogamy
 (C) xenogamy (D) hybridization
37. Geitonogamy involves
 (A) Fertilization of a flower by the pollen from another flower of the same plant.
 (B) Fertilization of a flower by the pollen from the same flower.
 (C) Fertilization of a flower by the pollen from a flower of another plant in the same population.
 (D) Fertilization of a flower by the pollen from a flower of another plant belonging to a distant population.



38. The term used for transfer of pollen grains from anthers of one plant to stigma of a different plant which, during pollination, brings genetically different types of pollen grains to stigma, is:
(A) Cleistogamy (B) Xenogamy
(C) Geitonogamy (D) Chasmogamy
39. Which one of the following is NOT true about self-pollination? [MHT CET 2018]
(A) A sure method
(B) Most economic
(C) Maintains genetic purity
(D) Favors evolution
40. Progeny resulting from cross pollination are [MHT CET 2019]
(A) genetically stable
(B) always sterile
(C) homozygous and less viable
(D) genetically variable
41. Cross pollination does not occur in [MH CET 2014]
(A) allogamous flowers
(B) geitonogamous flowers
(C) cleistogamous flowers
(D) chasmogamous flowers
42. Cross-pollination through insect agent is called
(A) Anthropophily (B) Malacophily
(C) Entomophily (D) Ornithophily
43. Large stout, nocturnal flowers producing copious nectar and emitting fermenting fruity odour, are the adaptations for [MH CET 2015]
(A) Entomophily (B) Ornithophily
(C) Chiropterophily (D) Anemophily
44. Pollination in water hyacinth and water lily is brought about by the agency of
(A) bats (B) water
(C) insects or wind (D) birds
45. In water hyacinth and water lily, pollination takes place by:
(A) water currents only
(B) wind and water
(C) insects and water
(D) insects or wind
46. What type of pollination takes place in *Vallisneria*?
(A) Male flowers are carried by water currents to female flowers at surface of water.
(B) Pollination occurs in submerged condition by water.
(C) Flowers emerge above surface of water and pollination occurs by insects.
(D) Flowers emerge above water surface and pollen is carried by wind.

47. Which of the following are the important floral rewards to the animal pollinators?
(A) Colour and large size of flower.
(B) Nectar and pollen grains.
(C) Floral fragrance and calcium crystals.
(D) Protein pellicle and stigmatic exudates.
48. Identify the correct sequence of matches with the type of pollination and its characteristics.

a.	Ornithophily	1.	Nocturnal flower
b.	Entomophily	2.	Light pollens
c.	Chiropterophily	3.	Funnel shaped corolla
d.	Anemophily	4.	Pleasant fragrance and nectar

- [MHT CET 2019]
(A) a-4,b-3,c-1,d-2 (B) a-2,b-1,c-3,d-4
(C) a-3,b-4,c-1,d-2 (D) a-3,b-4,c-2,d-1
49. Anemophily is NOT observed in [MH CET 2015]
(A) Maize (B) Jowar
(C) Sugarcane (D) *Salvia*
50. Attractants and rewards are required for
(A) anemophily (B) entomophily
(C) hydrophily (D) cleistogamy
51. A dioecious flowering plant prevents both:
(A) Autogamy and xenogamy
(B) Autogamy and geitonogamy
(C) Geitonogamy and xenogamy
(D) Cleistogamy and xenogamy
- 1.7 Outbreeding devices (contrivances)**
52. What is the outbreeding device, where the stamens and carpels mature at different times called? [MHT CET 2016]
(A) Monoecy
(B) Self sterility
(C) Dichogamy
(D) Heterostyly
53. Which one of the following may require pollinators, but is genetically similar to autogamy?
(A) Geitonogamy (B) Xenogamy
(C) Apogamy (D) Cleistogamy
54. In which one of the following, both autogamy and geitonogamy are prevented?
(A) Maize (B) Wheat
(C) Papaya (D) Castor
55. In some plants, stigma and anther mature at different times because
(A) it attracts pollinators
(B) it facilitates self-pollination
(C) it prevents cross pollination
(D) it facilitates cross pollination



1.8 Pollen-Pistil Interaction

56. Fill up the blanks with suitable words.
The ability of the pistil to recognize pollen is dependent on _____ components and _____ guide the entry of pollen tube. This study leads to help _____ in getting _____ even in _____.
- p. Chemicals
q. Plant breeders
r. Hybrids
s. Incompatible pollination
t. Synergids
- (A) p, q, r, s, t (B) p, t, q, r, s
(C) t, p, s, r, q (D) p, r, q, s, t

1.9 Double fertilization

57. Double fertilization in angiosperms was first discovered by S.G. Nawaschin in _____ plants. [MHT CET 2018]
(A) *Lilium* (B) sunflower
(C) wheat (D) mango
58. Double fertilization is exhibited by
(A) Gymnosperms
(B) Algae
(C) Fungi
(D) Angiosperms
59. Double fertilization is
(A) Fusion of two male gametes with one egg
(B) Fusion of one male gamete with two polar nuclei
(C) Fusion of two male gametes of a pollen tube with two different eggs
(D) Syngamy and triple fusion
60. What is the fate of the male gametes discharged in the synergid?
(A) One fuses with the egg, other(s) fuse(s) with synergid nucleus.
(B) One fuses with the egg and other fuses with central cell nuclei.
(C) One fuses with the egg, other(s) degenerate(s) in the synergid.
(D) All fuse with the egg.
61. The megasporangium proper of an angiosperm ovule is represented by [MHT CET 2017]
(A) integument
(B) funicle
(C) nucellus
(D) micropyle
62. The CORRECT sequence of events during double fertilization in Angiosperms is [MHT CET 2016]
(A) Triple fusion, syngamy, porogamy
(B) Syngamy, triple fusion, porogamy
(C) Porogamy, syngamy, triple fusion
(D) Syngamy, porogamy, triple fusion

63. Function of filiform apparatus is to
(A) Recognize the suitable pollen at stigma
(B) Stimulate division of generative cell
(C) Produce nectar
(D) Guide the entry of pollen tube
64. In angiosperms, the fusion of male gamete with the secondary nucleus is considered as "second fertilization" because [MHT CET 2018]
(A) it is fusion of two nuclei.
(B) secondary nucleus is a sister nucleus of the egg.
(C) it takes place in embryo sac.
(D) it takes place after pollination.

1.11 Development of Embryo

65. In angiosperms, during development of embryo, the suspensor cells develop from [MH CET 2015]
(A) oospore (B) integument
(C) endosperm (D) cotyledon
66. The suspensor during the development of an angiosperm embryo is formed from _____ [MHT CET 2017]
(A) basal cell
(B) apical cell
(C) embryonal cell
(D) generative cell
67. **Assertion (A):** Unlike coconut, groundnut consumes endosperm completely during embryo development. **Reason (R):** Though the embryogeny is similar in groundnut and coconut, perisperm is seen in coconut.
(A) Both (A) and (R) are true and (R) is the correct explanation of (A).
(B) Both (A) and (R) are true and (R) is not correct explanation of (A).
(C) (A) is true but (R) is false.
(D) (A) is false but (R) is true.

1.12 Seed and Fruit Development

68. Which character of angiosperms helped in their dominance on earth? [MHT CET 2018]
(A) Formation of seeds
(B) Formation of endosperm
(C) Double fertilization
(D) Presence of xylem vessels
69. Which one of the following is a non-endospermic seed? [MH CET 2015]
(A) Sunflower (B) Coconut
(C) Ground nut (D) Wheat
70. Persistent nucellus in the seed is known as:
(A) Hilum (B) Tegmen
(C) Chalaza (D) Perisperm



71. Which one of the following statements regarding post-fertilization development in flowering plants is INCORRECT?
- (A) Central cell develops into endosperm
 - (B) Ovules develop into embryo sac
 - (C) Ovary develops into fruit
 - (D) Zygote develops into embryo

1.13 Apomixis

72. Formation of seeds without fertilization is called
- (A) amphimixis
 - (B) parthenocarpy
 - (C) apomixis
 - (D) polyembryony
73. In some species of family Asteraceae seeds are produced without fertilization. It is called as
- [MHT CET 2017]**
- (A) apomixis
 - (B) amphimixis
 - (C) parthenocarpy
 - (D) vivipary
74. Seed formation without fertilization in flowering plants involves the process of
- (A) Somatic hybridization
 - (B) Apomixis
 - (C) Sporulation
 - (D) Budding
75. In some plants, the female gamete develops into embryo without fertilization. This phenomenon is known as:
- (A) syngamy
 - (B) parthenogenesis
 - (C) autogamy
 - (D) parthenocarpy

1.14 Parthenocarpy

76. Find out the wrong statement. **[MHT CET 2019]**
- (A) Parthenocarpic fruits are generally preferred by consumers.
 - (B) Gibberellins induce parthenocarpy.
 - (C) Parthenocarpic fruits are seedless fruits.
 - (D) Parthenocarpic fruits are developed from fertilized ovary.

Miscellaneous

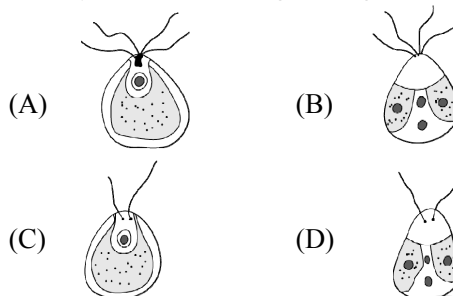
77. Which of the following statements is NOT correct?
- (A) Pollen germination and pollen tube growth are regulated by chemical components of pollen interacting with those of the pistil.
 - (B) Some reptiles have also been reported as pollinators in some plant species.
 - (C) Pollen grains of many species can germinate on the stigma of a flower, but only one pollen tube of the same species grows into the style.
 - (D) Insects that consume pollen or nectar without bringing about pollination are called pollen/nectar robbers.

78. In majority of angiosperms
- (A) a small central cell is present in the embryo sac.
 - (B) egg has a filiform apparatus.
 - (C) there are numerous antipodal cells.
 - (D) reduction division occurs in the megaspore mother cells.
79. The plants parts which consist of two generations one within the other:
- (a) Pollen grains inside the anther
 - (b) Germinated pollen grain with two male gametes
 - (c) Seeds inside the fruit
 - (d) Embryo sac inside the ovule
- (A) (a), (b) and (c)
 - (B) (c) and (d)
 - (C) (a) and (d)
 - (D) (a) only
80. Select the CORRECT sequence of events.
- (A) Gametogenesis → Gamete transfer → Syngamy → Zygote → Cell differentiation → Cell division (Cleavage) → Organogenesis
 - (B) Gametogenesis → Gamete transfer → Syngamy → Zygote → Cell division (Cleavage) → Cell differentiation → Organogenesis
 - (C) Gametogenesis → Gamete transfer → Syngamy → Zygote → Cell division → (Cleavage) → Organogenesis → Cell differentiation
 - (D) Gametogenesis → Syngamy → Gamete transfer → Zygote → Cell division (Cleavage) → Cell differentiation → Organogenesis
81. In angiosperm, what is the ploidy level of endosperm?
- (A) n
 - (B) $2n$
 - (C) $3n$
 - (D) $4n$
82. An angiospermic male plant with 24 chromosomes in its pollen mother cells is crossed with female plant bearing 24 chromosomes in its root cells. What would be the ploidy of embryo and endosperm respectively formed after this cross?
- [MH CET 2014]**
- (A) 24 and 48
 - (B) 24 and 24
 - (C) 48 and 72
 - (D) 24 and 36
83. In an angiosperm a female plant having $2n = 24$ is crossed with a male plant having $2n = 12$. What will be the chromosome number of the endosperm?
- [MHT CET 2016]**
- (A) 12
 - (B) 18
 - (C) 24
 - (D) 30



84. If the cells of the nucellus in the angiosperm ovule contain 24 chromosomes, what will be the number of chromosomes in the endosperm of a self-pollinated flower? [MHT CET 2017]
(A) 12 (B) 24 (C) 36 (D) 48
85. If the number of chromosomes in an endosperm of seed is 21, what will be the chromosome number in the secondary nucleus? [MHT CET 2019]
(A) 7 (B) 28 (C) 14 (D) 21
86. For the formation of 140 angiospermic seeds how many meiotic cell divisions are expected? [MHT CET 2019]
(A) 175 (B) 280 (C) 560 (D) 240
87. With respect to angiosperms, identify the INCORRECT pair from the following:
(A) Primary endosperm nucleus – $3n$
(B) Antipodals – $2n$
(C) Cells of nucellus of ovule – $2n$
(D) Vegetative cell of male gametophyte – n
88. Which one of the following statements is correct?
(A) Hard outer layer of pollen is called intine.
(B) Sporogenous tissue is haploid.
(C) Endothecium produces the microspores.
(D) Tapetum nourishes the developing pollen.
89. Banana is an example of
(A) parthenocarpy (B) apomixis
(C) parthenogenesis (D) polyembryony
90. The morphological nature of the edible part of coconut is
(A) perisperm (B) cotyledon
(C) endosperm (D) pericarp
91. Which one of the following is NOT a disadvantage of self-pollination? [MHT CET 2017]
(A) No scope for developing improved varieties
(B) Progeny becomes weaker
(C) Genetic stability can be maintained
(D) Less adaptability to climatic variations
92. Which one of the following statements is NOT correct?
(A) Water Hyacinth growing in the standing water, drains oxygen from water that leads to the death of fishes.
(B) Offspring produced by the asexual reproduction are called clone.
(C) Microscopic, motile, asexual reproductive structures are called zoospores.
(D) In potato, banana and ginger, the plantlets arise from the internodes which are present in the modified stem.

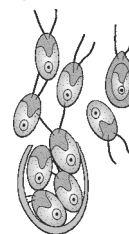
93. Which is the motile zoospore of *Chlamydomonas* in the given figure?



Homework

1.1 Asexual Reproduction

- Select the INCORRECT statement from the following.
 - Asexual reproduction does not involve fusion of sex cells.
 - Budding, gemmae formation, zoospores are examples of asexual reproduction.
 - Progeny formed by asexual reproduction differs genetically from its parent.
 - The new individuals formed by asexual reproduction are called clones.
- Select the CORRECT statement with respect to following diagram.



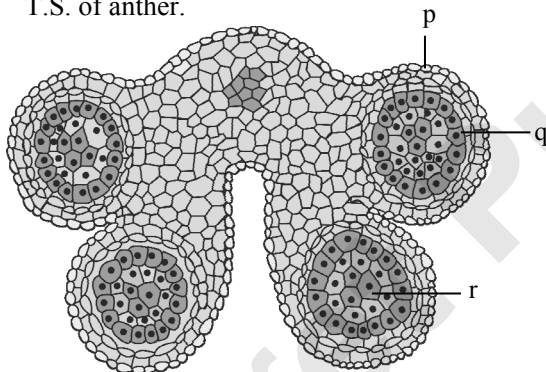
- It shows non-motile spores of Yeast.
 - It shows motile spores of *Amoeba*.
 - It shows *Chlamydomonas* which reproduces asexually by formation of zoospores.
 - It shows gemmae formed by *Marchantia*.
- Reproductive roots taking part in reproduction are found in
 - Asparagus*
 - Dahlia*
 - Sweet Potato
 - All of these
 - In grafting, what is a stock?
 - Roots of dicotyledonous plant.
 - Part of the other plant inserted on the rooted plant.
 - Plant rooted in the soil on which the part of the other plant is inserted.
 - Plant with a primary meristem.



5. Grafting is not possible in monocots because
 (A) they do not show secondary growth.
 (B) stock and scion of monocot plants do not fuse.
 (C) they do not have inter or intra-fascicular cambium.
 (D) all the above

1.2 Sexual reproduction

6. Anther is generally composed of
 (A) one sporangium (B) two sporangia
 (C) three sporangia (D) four sporangia
7. Select the INCORRECT statement from the following with respect to anther.
 (A) The archesporial cell divides into an inner sporogenous cell and outer primary parietal cell.
 (B) Sporogenous tissue is formed from sporogenous cells of an anther.
 (C) Only few cells of sporogenous tissue are capable of giving rise to a microspore tetrad.
 (D) Parietal cells of an anther undergo divisions to form anther wall layers.
8. Identify labels p, q and r in the given figure of T.S. of anther.



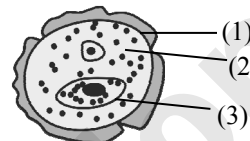
	p	q	r
(A)	Epidermis	Middle layers	MMC
(B)	Epidermis	Tapetum	Sporogenous tissue
(C)	Endothecium	Middle layers	MMC
(D)	Endothecium	Connective	Sporogenous tissue

9. The anther wall consists of four wall layers where
 (A) endothecium lies inner to middle layers
 (B) tapetum lies just inner to endothecium
 (C) tapetum lies next to epidermis
 (D) middle layers lie between endothecium and tapetum

1.3 Microsporogenesis

10. A microspore mother cell forms
 (A) ovule (B) embryo sac
 (C) pollen sac (D) pollen grains

11. Pollen grains can remain well preserved in fossil due to presence of
 (A) intine (B) germ pore
 (C) sporopollenin (D) none of these
12. In flowering plant, a mature gametophyte is derived from a pollen mother cell by
 (A) 3 mitosis
 (B) 1 meiosis and 3 mitosis
 (C) 1 meiosis and 2 mitosis
 (D) single meiosis
13. In the given diagram of pollen grain, identify 1, 2 and 3.



- (A) 1 – Exine; 2 – Generative cell; 3 – Tube cell
 (B) 1 – Intine; 2 – Generative cell; 3 – Tube cell
 (C) 1 – Exine; 2 – Tube cell; 3 – Generative cell
 (D) 1 – Intine; 2 – Vegetative cell; 3 – Generative cell
14. Select the INCORRECT statement with respect to generative cell.
 (A) It is rich in food.
 (B) It has irregular shaped nucleus.
 (C) It is bigger than vegetative cell.
 (D) It is thin walled.
15. If there are 4 microspore mother cells in anthers, what will be the number of pollen grains?
 (A) 4 (B) 8 (C) 12 (D) 16
16. If there are 24 microspore mother cells in plant, then how many meiotic divisions are required to produce 576 haploid microspores?
 (A) 24 (B) 96 (C) 12 (D) 72
17. How many pollen mother cells should undergo meiotic division to produce 64 pollen grains?
 (A) 4 (B) 8 (C) 16 (D) 32
18. When a microspore mother cell with 40 chromosomes undergoes meiosis, each of the four resulting cells has
 (A) 80 chromosomes (B) 40 chromosomes
 (C) 20 chromosomes (D) 10 chromosomes
19. **Assertion (A):** Pollen mother cells (PMC) are the first male gametophytic cells.
Reason (R): Each pollen mother cell (PMC) produces two pollen grains.
 (A) Both A and R are true and R is the correct explanation of A.
 (B) Both A and R are true and R is not the correct explanation of A.
 (C) A is true and R is false.
 (D) Both A and R are false.



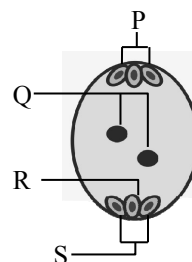
1.4 Structure of Anotropous Ovule

20. In anatropous ovule, the micropyle is
 (A) in straight line with funicle
 (B) at right angle with funicle
 (C) at 45° with funicle
 (D) side by side with funicle
21. Secondary diploid nucleus is made up of
 (A) 2 female gametes
 (B) 2 polar nuclei
 (C) 2 male gametes
 (D) One male gamete and one female gamete
22. Polar nuclei are found in
 (A) male gametophyte
 (B) nucellus
 (C) female gametophyte
 (D) pollen chamber
23. Which cell of the gametophyte of a normal angiosperm is diploid at the time of fertilization?
 (A) Prothallial cell/vegetative cell
 (B) Antipodal cell and synergids
 (C) Secondary nucleus
 (D) Generative cell
24. Which of the following pairs of plant parts are haploid?
 (A) Nucellus and antipodals
 (B) Antipodal and egg cell
 (C) Antipodals and megaspore mother cell
 (D) Nucellus and primary endosperm nucleus
25. Which one is female gametophyte in angiosperms?
 (A) Embryo (B) Embryo sac
 (C) Endosperm (D) Synergid

1.5 Megasporogenesis

26. Generally, how many megaspores take part in the development of female gametophyte?
 (A) One (B) Two
 (C) Three (D) Four
27. A linear tetrad of 4 cells lying in an axial row is formed during the development of
 (A) Embryo sac (B) Pollen grains
 (C) Ovary (D) Ovule
28. The haploid cell which divides by mitosis to form embryo sac is
 (A) diploid megaspore
 (B) microspore mother cell
 (C) functional megaspore
 (D) non-functional megaspore
29. The number of nuclei migrating from each of the micropylar quartet and chalazal quartet to the centre of the normal embryo sac is
 (A) one
 (B) two
 (C) four
 (D) number not fixed

30. Identify the part of embryo sac which takes part in formation of primary endosperm nucleus during fertilization.



- (A) P (B) Q (C) R (D) S
31. If the number of chromosomes in a root cell is 14, what will be the number of chromosomes in synergids of an ovule of that parent?
 (A) 7 (B) 14 (C) 21 (D) 28
32. The development of embryo sac is described as monosporic because;
 (A) it occurs within the megaspore.
 (B) only one egg takes part in fertilization.
 (C) mitosis occurs only once.
 (D) it develops from a single megaspore.

1.6 Pollination

33. What is important for self-pollination?
 (A) Dichogamy
 (B) Dioecious plants
 (C) self-sterility
 (D) Bisexual flowers
34. Geitonogamy is found between flowers which are
 (A) genetically similar
 (B) genetically different
 (C) unisexual
 (D) self-sterile
35. Which of the following statements are true about self-pollination?
 (i) Self-pollination is the most economic method for plant modification.
 (ii) Genetic stability can be maintained in the progeny through self-pollination.
 (iii) Undesirable characters can be eliminated through self-pollination.
 (iv) Continued self-pollination may result in the less viable seeds.
 (v) Self-pollination favours evolution.
 (A) (i), (ii), (iv) are correct and (iii), (v) are incorrect.
 (B) (iii), (v) are correct and (i), (ii), (iv) are incorrect.
 (C) (i), (iii), (v) are correct and (ii), (iv) are incorrect.
 (D) all are correct
36. Heterozygosity is most favoured in
 (A) cleistogamy (B) autogamy
 (C) xenogamy (D) geitonogamy



37. Which of the following statement is INCORRECT with respect to epiphydrophilous plants?
- (A) The pollen grains float on water surface and reach the stigma of female flower.
(B) It is commonly observed in water hyacinth and water lily.
(C) Specific gravity of pollen grain is equal to that of water.
(D) In *Vallisneria* female flowers reach the water surface temporarily to ensure pollination.
38. Which of the following is hydrophilous plant?
- (A) *Halogaris* (B) *Potamogeton*
(C) *Zostera* (D) Lotus
39. A close relation between flower and pollinating agent is best exhibited by
- (A) *Maize* (B) *Salvia*
(C) *Zostera* (D) *Wheat*
40. Which of the following is NOT an adaptation in ornithophilous flowers?
- (A) Flowers are usually brightly coloured, large and showy.
(B) They secrete profuse, dilute nectar.
(C) Pollen grains are sticky and spiny.
(D) The flowers produce sweet odour (smell) and have nectar glands.
41. Find the WRONG statement about entomophilous flowers from the following.
- (A) Entomophilous flowers are large, showy and often brightly coloured.
(B) The flowers produce sweet odour (smell) and have nectar glands.
(C) Pollen grains of entomophilous flowers have smooth exine.
(D) Stigma of entomophilous flowers is sticky.
42. Pollination in *Anthrocephalus* and *Kigelia pinnata* is
- (A) anemophilous (B) entomophilous
(C) ornithophilous (D) chiropterophilous

1.7 Outbreeding Devices (Contrivances)

43. Cross pollination is preferred over self-pollination because
- (A) the new and improved varieties are formed.
(B) it results in a better and healthier offspring.
(C) it favours the process of evolution.
(D) all of the above.
44. Plants show outbreeding devices as,
- i. continued self-pollination results in the inbreeding depression.
ii. to promote cross pollination and increase genetic diversity.
iii. self-pollination is an essential factor for evolution by natural selection.

- (A) i and iii (B) i and ii
(C) ii and iii (D) only iii
45. Dioecious condition seen in papaya plant prevents
- (A) autogamy only
(B) geitonogamy only
(C) autogamy as well as geitonogamy
(D) pollination
46. Dichogamy which helps in cross pollination is a floral mechanism in which
- (A) pollen sac and stigma are at different heights.
(B) anther and stigma mature at different times.
(C) structure of pollen sac and stigma functions as hurdles.
(D) pollen grain is unable to germinate on the stigma of the same flower.
47. Identify the condition in which pollen grains of other flowers germinate rapidly over the stigma than the pollen grains from the same flower.
- (A) Proandry (B) Prepotency
(C) Progyny (D) Herkogamy
48. In *Calotropis*, pentangular stigma is positioned above the level of anthers (pollinia). This is an example of
- (A) herkogamy (B) protandry
(C) protogyny (D) self-sterility

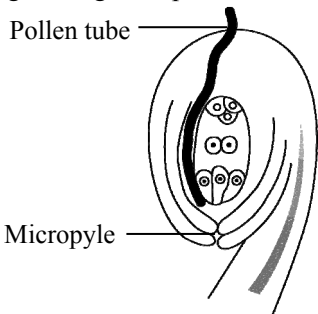
1.8 Pollen-Pistil Interaction

49. Select the INCORRECT statement from the following.
- i. The pistil has the ability to recognise and accept the right or compatible pollen of the same species.
ii. The compatible pollen absorbs water and nutrients from the surface of stigma, germinates and produces pollen tube.
iii. Pollination always guarantee the transfer of right type of pollen grain on stigma.
- (A) only iii (B) both i and ii
(C) i, ii and iii (D) only i

1.9 Double Fertilization

50. Which of the following statement is INCORRECT about double fertilization?
- (A) It involves use of only one male gamete.
(B) It avoids the chances of polyembryony.
(C) It consists of two fusions and results in the formation of two products.
(D) First fertilization restores diploidy in life cycle.
51. Which of the following is not true for double fertilization?
- (A) Discovered by Nawaschin.
(B) Male gamete and secondary nucleus fused to form endosperm nucleus.
(C) Endosperm nucleus is diploid.
(D) Endosperm provides nutrition to embryo.



52. In angiosperms, the micropyle
 (A) receives pollen grain
 (B) secretes a pollen drop
 (C) receives pollen tube
 (D) all of these
53. The given figure represents
- 
54. Through which route the pollen tube can enter the ovule?
 (A) Chalaza (B) Micropyle
 (C) Funiculus (D) All of these
55. After penetrating stigmatic and styler tissues, the pollen tube usually grows down towards the egg because
 (A) the egg cell attracts the pollen tube as they have dissimilar electric charge.
 (B) the filiform apparatus of synergids is believed to attract the pollen tube.
 (C) it has no other passage to follow.
 (D) it grows under control of nucleus.
56. The total number of nuclei involved in double fertilization are
 (A) 2 (B) 4
 (C) 5 (D) 6
57. If an endosperm of an angiosperm has 24 chromosomes, what would be the number of chromosomes in the megaspore mother cell of the same plant?
 (A) 8 (B) 16
 (C) 24 (D) 32
58. There are 12 chromosomes in the megaspore mother cell of an angiosperm. What shall be the chromosome number in the endosperm?
 (A) 18 (B) 36
 (C) 12 (D) 24

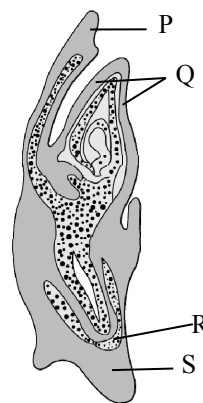
1.10 Development of Endosperm

59. In angiosperms, the oospore on development produces
 (A) seed (B) embryo
 (C) protonema (D) endosperm

60. At what stage of endosperm development, will you observe nuclear or cellular type of endosperm?
 (A) When division starts in embryo.
 (B) When embryo is heart-shaped.
 (C) Mature stage of endosperm.
 (D) Just after division of primary endosperm nucleus.
61. During embryo development, the lower tier of octant give rise to _____ and _____.
 (A) plumule and cotyledon
 (B) hypocotyl and plumule
 (C) plumule and radicle
 (D) hypocotyl and radicle
62. Read the given statements and select the correct option.
- In post-fertilization changes within the ovule, the development of embryo is followed by the development of endosperm.
 - Helobial endosperm is intermediate between cellular and nuclear type endosperm
 - Helobial endosperm is mostly observed in 72 families of dicots.
- The correct statement/s is/are
 (A) i and ii (B) only ii
 (C) i,ii and iii (D) only i

1.11 Development of Embryo

63. Identify labels P, Q, R and S in the given figure of monocot embryo.



	P	Q	R	S
(A)	epiblast	coleorhiza	radicle	coleoptile
(B)	scutellum	coleoptile	root cap	coleorhiza
(C)	shoot apex	coleorhiza	radicle	coleoptile
(D)	epiblast	coleoptile	shoot apex	coleorhiza

64. Dicot embryo consists of
 (A) radicle and plumule
 (B) radicle, plumule, cotyledons and sometimes endosperm
 (C) radicle, plumule, cotyledons and tegmen
 (D) radicle, plumule, cotyledons, tegmen and testa



65. Select the INCORRECT statement from the following.
- (A) The embryo development is similar in both dicots and monocots up to the octant stage.
- (B) In monocot embryo, the protective sheath of plumule is called coleorhiza and that of radicle is coleoptile.
- (C) In monocot embryo, single cotyledon occupies terminal position and plumule is lateral.
- (D) In monocots, the single shield shaped cotyledon is called as scutellum.
66. Which of the following part of a pistil forms a fruit after fertilization?
- (A) Stigma (B) Ovule
(C) Ovary (D) Style

Miscellaneous

67. Which one of the following events in a botanical garden is never directly influenced by light?
- (A) Flowering (B) Photosynthesis
(C) Transpiration (D) Fertilization
68. If the diploid number of an angiospermic plant is 24, the number of chromosomes in the pollen grain, endosperm and integument will be
- (A) 12, 36, 12 (B) 12, 24, 36
(C) 12, 12, 36 (D) 12, 36, 24
69. In angiosperms, free nuclear divisions occurs during
- (A) gamete formation
(B) embryo formation
(C) endosperm formation
(D) flower formation
70. Which one is an example of triploid tissue?

- (A) Onion root
(B) Pollen grain of sunflower
(C) Maize and lily endosperm
(D) None of the above
71. Pollination characteristically occurs in
- (A) Angiosperms and fungi
(B) Angiosperms and gymnosperms
(C) Pteridophytes and angiosperms
(D) Bryophytes and angiosperms
72. If diploid chromosome number in a flowering plant is 12, then which one of the following will have only 6 chromosomes?
- (A) Endosperm (B) Leaf cells
(C) Cotyledons (D) Synergids
73. Match Column I and Column II and choose the correct option.

	Column I		Column II
i.	Ovule	a.	Pollen grain
ii.	Microspore	b.	Female reproductive whorl
iii.	Carpel	c.	Genetically identical organisms
iv.	Clones	d.	Integumented Megasporangium

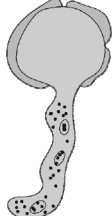
- (A) (i - d); (ii - a); (iii - b); (iv - c)
(B) (i - d); (ii - a); (iii - c); (iv - b)
(C) (i - d); (ii - c); (iii - b); (iv - a)
(D) (i - a); (ii - d); (iii - c); (iv - b)
74. The success of seed plants on land is mainly due to
- (A) presence of conducting tissues
(B) presence of mechanical tissues
(C) evolution of siphonogamy
(D) presence of xylem vessels

Previous Years' Questions

1. The suspensor of the embryo in angiosperms develops from _____ cell. [MHT CET 2020]
- (A) lateral (B) embryonal
(C) apical (D) basal
2. The megasporangium in angiosperms is usually _____. [MHT CET 2020]
- (A) unitegmic (B) polytegmic
(C) tritegmic (D) bitegmic
3. How many pollen grains can be produced from a dithecous tetralocular anther with 75 microspore mother cells in each of its chamber? [MHT CET 2020]
- (A) 1200 (B) 900 (C) 300 (D) 750
4. During the development of embryo sac, a megaspore mother cell undergoes _____ meiosis and mitosis respectively. [MHT CET 2020]

- (A) 1, 3 (B) 3, 1 (C) 1, 4 (D) 4, 1
5. Entry of a pollen tube in an ovule through its micropyle during fertilization is called _____. [MHT CET 2020]
- (A) chalazogamy (B) cleistogamy
(C) porogamy (D) mesogamy
6. Epiphytically is observed in which of the following plants? [MHT CET 2020]
- (A) *Vallisneria*
(B) Lotus
(C) *Ceratophyllum*
(D) *Zostera*
7. In angiosperms, the embryo sac is _____. [MHT CET 2021]
- (A) uninucleate
(B) binucleate
(C) multinucleate
(D) enucleate



8. Which one of the following is unlike other nuclei in the embryo sac of angiosperms regarding ploidy? [MHT CET 2021]
 (A) Male gamete nucleus
 (B) Egg nucleus
 (C) Secondary nucleus
 (D) Antipodal nucleus
9. In which of the following plants male flower floats on the surface of water? [MHT CET 2021]
 (A) *Potamogeton* (B) *Zostera*
 (C) Water lily (D) *Vallisneria*
10. In angiosperms, the embryo is developed at _____ of the embryo sac. [MHT CET 2021]
 (A) antipodal side (B) micropylar end
 (C) chalazal end (D) centre
11. Polyembryony was first observed by Leeuwenhoek in the seeds of _____. [MHT CET 2021]
 (A) Citrus (B) Mango
 (C) Orchid (D) Papaya
12. How many of the following statements are true about angiosperms?
 A. The generative cell floats in the cytoplasm of vegetative cell.
 B. The stalk of ovule is called funiculus.
 C. Pollen grains are shed at two celled stage.
 D. Embryo sac is diploid.
 E. Megaspore mother cell towards chalazal end becomes functional.
 [MHT CET 2021]
 (A) A, B and C only (B) D and E only
 (C) A and B only (D) B and C only
13. Which one of the following statements is INCORRECT about angiospermic seed/fruit? [MHT CET 2021]
 (A) The micropyle of the ovule persists in the seed.
 (B) Coconut is a non-endospermic seed.
 (C) Coconut is a fleshy fruit.
 (D) Fruit development is triggered by hormones produced by developing seeds.
14. Heterostyly is a contrivance for _____. [MHT CET 2021]
 (A) geitonogamy only
 (B) autogamy only
 (C) xenogamy only
 (D) geitonogamy and xenogamy
15. How many of the following statements are true about the figure given below.
 i. Germination of pollen grain.
 ii. Motile male gametes.
 iii. Two male gametes and one female gamete.
 iv. Pollen grain without exine.
 v. Tube nucleus at the tip of pollen tube.
 [MHT CET 2022]
 (A) i and v are true (B) ii and iv are true
 (C) i and ii are true (D) ii and iii are true
- 
16. After double fertilization in angiosperms, the products of syngamy and triple fusion are _____ and _____ respectively. [MHT CET 2022]
 (A) diploid embryo and triploid endosperm
 (B) diploid embryo and diploid endosperm
 (C) triploid embryo and haploid endosperm
 (D) triploid embryo and diploid endosperm
17. Which one of the following shows more than one ovule? [MHT CET 2022]
 (A) Rice (B) Mango
 (C) Tomato (D) Wheat
18. In *Taraxacum*, the unreduced embryo sac is derived from _____. [MHT CET 2022]
 (A) haploid nucellus tissue
 (B) diploid microspore mother cell
 (C) diploid megaspore mother cell
 (D) functional megaspore
19. Match the type of pollination given in Column-I with its pollinating agent from Column-II. [MHT CET 2022]
- | | Column-I | | Column-II |
|------|----------------|----|-----------|
| i. | Ornithophily | a. | Bat |
| ii. | Entomophily | b. | Wind |
| iii. | Anemophily | c. | Bird |
| iv. | Chiropterphily | d. | Insect |
- (A) i – b, ii – c, iii – d, iv – a
 (B) i – c, ii – a, iii – d, iv – b
 (C) i – d, ii – c, iii – b, iv – a
 (D) i – c, ii – d, iii – b, iv – a
20. Match the plants given in Column-I with their type of endosperm in Column-II. Choose the correct answer from options given below. [MHT CET 2022]
- | | Column-I | | Column-II |
|------|-------------------|----|-----------|
| i. | Coconut | a. | helobial |
| ii. | <i>Balsam</i> | b. | perisperm |
| iii. | <i>Asphodelus</i> | c. | nuclear |
| iv. | Black pepper | d. | cellular |



- (A) i - d, ii - c, iii - b, iv - a
 (B) i - a, ii - b, iii - c, iv - d
 (C) i - c, ii - d, iii - a, iv - b
 (D) i - b, ii - v, iii - d, iv - a

21. Embryos develop directly from diploid cells of the nucellus in _____. [MHT CET 2022]

- (A) *Citrus* (B) *Cynodon*
 (C) *Mirabilis* (D) *Helianthus*

22. Match the following contrivance from Column-I with its example in Column-II.

	Column-I		Column-II
i.	Protandry	a.	<i>Calotropis</i>
ii.	Prepotency	b.	Tobacco
iii.	Self sterility	c.	Sunflower
iv.	Herkogamy	d.	Apple

[MHT CET 2022]

- (A) i - d, ii - c, iii - b, iv - a
 (B) i - c, ii - d, iii - b, iv - a
 (C) i - b, iii - a, iii - c, iv - d
 (D) i - a, iii - b, iii - c, iv - d

23. Which one of the following shows endosperm in two forms? [MHT CET 2023]

- (A) Coconut (B) Mango
 (C) Pea (D) Citrus

24. Which one of the following is NOT true regarding endothecium of the anther wall? [MHT CET 2023]

- (A) Common for all 4 pollen sacs.
 (B) Present between epidermis and middle layers.
 (C) Made up of radially elongated cells with fibrous thickenings.
 (D) It is nutritive in function.

25. Match the part of the ovule in Column-I with its character in Column-II and choose the correct option. [MHT CET 2023]

	Column-I		Column-II
i	Integument	a.	Stalk of the ovule
ii	Micropyle	b.	Protective covering of the ovule
iii	Nucellus	c.	Small opening in integuments
iv.	Funicle	d.	Diploid cells with food

- (A) i - b, ii - d, iii - c, iv - a
 (B) i - b, ii - c, iii - d, iv - a
 (C) i - c, ii - b, iii - a, iv - d
 (D) i - d, ii - c, iii - a, iv - b

26. The fruits developed without fertilization are called parthenocarpic fruits, these fruits have _____. [MHT CET 2023]

- (A) one seed only
 (B) many seeds
 (C) no seeds
 (D) large sized seeds

27. Identify the correct sequence of embryogenesis in dicot plants. [MHT CET 2023]

- i. zygote.
 ii. proembryo
 iii. globular embryo
 iv. heart shaped embryo
 v. mature embryo

Choose the correct option.

- (A) i → ii → iii → iv → v
 (B) i → iii → ii → iv → v
 (C) i → iii → v → ii → iv
 (D) ii → i → iii → iv → v

28. Which one of the following is an example of aquatic plant pollinated by water? [MHT CET 2023]

- (A) Water hyacinth (B) Lotus
 (C) Water lily (D) *Zostera*

29. Which one of the following is NOT a part of anther wall? [MHT CET 2023]

- (A) Tapetum (B) Endothecium
 (C) Integument (D) Middle layers

30. Identify the correct sequence of events of pollen pistil interaction given below.

- i. syngamy ii. pollination
 iii. siphonogamy iv. triple fusion
 v. porogamy

Choose the correct option. [MHT CET 2023]

- (A) ii → iii → i → v → iv
 (B) ii → i → iii → v → iv
 (C) ii → iii → v → i → iv
 (D) ii → v → iii → i → iv

31. The lowermost cell of the suspensor towards the embryo is known as _____. [MHT CET 2023]

- (A) haustoria (B) hypophysis
 (C) epicotyl (D) hypocotyl

32. Maturation of both androecium and gynoecium in a homogamous flower helps in _____. [MHT CET 2023]

- (A) cross pollination (B) self pollination
 (C) apomixis (D) polyembryony

33. How many pollen mother cells are involved in formation of 8 pollen tetrads? [MHT CET 2023]

- (A) 4 (B) 8 (C) 16 (D) 32



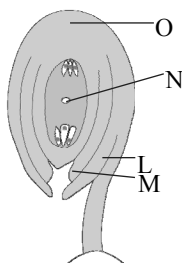
34. Outbreeding devices are developed in angiosperms to avoid _____.

[MHT CET 2023]

- (A) autogamy (B) allogamy
(C) fertilization (D) seed formation

35. Identify the part of ovule from given figure which forms tegmen in mature seed.

[MHT CET 2024]



- (A) L
(B) M
(C) N
(D) O

36. Complete the analogy by selecting the correct option, with respect to entry of pollen tube.

Micropyle : Porogamy :: Integuments : _____

[MHT CET 2024]

- (A) Syngamy (B) Mesogamy
(C) Siphonogamy (D) Chalazogamy

37. Most of the important crop plants are pollinated by _____.

[MHT CET 2024]

- (A) insects (B) bees
(C) wind (D) birds

38. Given below are two statements:

[MHT CET 2024]

Statement I - In all aquatic plants pollination occurs by water.

Statement II - Only in 30 genera of aquatic monocot, pollination occurs by water.

In the light of above statements, select the correct option given below:

- (A) Both statement I and statement II are correct.
(B) Both statement I and statement II are incorrect.
(C) Statement I is correct but statement II is incorrect.
(D) Statement I is incorrect but statement II is correct.

39. Microspore mother cells in anther are immediately enclosed by _____

[MHT CET 2024]

- (A) epidermis (B) tapetum
(C) middle layers (D) endothecium

40. In which method of vegetative reproduction a single bud is joined to the stock?

[MHT CET 2024]

- (A) Cutting (B) Micropropagation
(C) Cloning (D) Bud grafting

41. _____ is a non-biodegradable substance which keeps the pollens resistant to chemicals.

[MHT CET 2024]

- (A) Chitin (B) Sporopollenin
(C) Cellulose (D) Pectin

42. Flowers are dull coloured with strong fragrance in _____.

[MHT CET 2024]

- (A) chiropterophily
(B) ornithophily
(C) anaemophily
(D) hydrophily

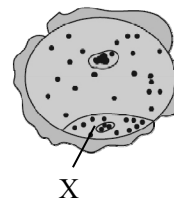
43. Which one of the following is NOT a significance of polyembryony?

[MHT CET 2024]

- i. Polyembryony increases the chance of survival of the new plants.
ii. Nucellar polyembryony is greatly useful in horticulture.
iii. Seedless fruits are formed.
iv. Genetically identical plants are produced due to cleavage polyembryony.
- (A) i and ii only (B) iii only
(C) i and iii only (D) iv only

44. Identify the label 'X' in the given diagram of a mature pollen grain.

[MHT CET 2024]



- (A) Generative cell
(B) Vegetative cell
(C) Male gamete
(D) Germ pore

45. The pollen grains have specific gravity higher than water in _____

[MHT CET 2024]

- (A) Lotus
(B) Water hyacinth
(C) *Zostera*
(D) *Vallisneria*

46. Ploidy level is NOT same in _____

[MHT CET 2024]

- (A) perisperm and integument
(B) integuments and embryo
(C) nucellus and secondary nucleus
(D) antipodals and secondary nucleus



Answer Key

Classwork

1. (A) 2. (B) 3. (D) 4. (B) 5. (A) 6. (C) 7. (D) 8. (D) 9. (A) 10. (D)
11. (D) 12. (A) 13. (C) 14. (C) 15. (D) 16. (C) 17. (A) 18. (A) 19. (A) 20. (A)
21. (C) 22. (B) 23. (D) 24. (C) 25. (A) 26. (D) 27. (B) 28. (C) 29. (C) 30. (B)
31. (C) 32. (B) 33. (B) 34. (D) 35. (A) 36. (B) 37. (A) 38. (B) 39. (D) 40. (D)
41. (C) 42. (C) 43. (C) 44. (C) 45. (D) 46. (A) 47. (B) 48. (C) 49. (D) 50. (B)
51. (B) 52. (C) 53. (A) 54. (C) 55. (D) 56. (B) 57. (A) 58. (D) 59. (D) 60. (B)
61. (C) 62. (C) 63. (D) 64. (B) 65. (A) 66. (A) 67. (C) 68. (A) 69. (C) 70. (D)
71. (B) 72. (C) 73. (A) 74. (B) 75. (B) 76. (D) 77. (C) 78. (D) 79. (C) 80. (B)
81. (C) 82. (D) 83. (D) 84. (C) 85. (C) 86. (A) 87. (B) 88. (D) 89. (A) 90. (C)
91. (C) 92. (D) 93. (C)

Homework

1. (C) 2. (C) 3. (D) 4. (C) 5. (D) 6. (D) 7. (C) 8. (B) 9. (D) 10. (D)
11. (C) 12. (C) 13. (D) 14. (C) 15. (D) 16. (A) 17. (C) 18. (C) 19. (D) 20. (D)
21. (B) 22. (C) 23. (C) 24. (B) 25. (B) 26. (A) 27. (A) 28. (C) 29. (A) 30. (B)
31. (A) 32. (D) 33. (D) 34. (A) 35. (A) 36. (C) 37. (B) 38. (C) 39. (B) 40. (D)
41. (C) 42. (D) 43. (D) 44. (B) 45. (C) 46. (B) 47. (B) 48. (A) 49. (A) 50. (A)
51. (C) 52. (C) 53. (B) 54. (D) 55. (B) 56. (C) 57. (B) 58. (A) 59. (B) 60. (D)
61. (D) 62. (B) 63. (B) 64. (B) 65. (B) 66. (C) 67. (D) 68. (D) 69. (C) 70. (C)
71. (B) 72. (D) 73. (A) 74. (C)

Previous Year's Questions

1. (D) 2. (D) 3. (A) 4. (A) 5. (C) 6. (A) 7. (C) 8. (C) 9. (D) 10. (B)
11. (A) 12. (A) 13. (B) 14. (C) 15. (A) 16. (A) 17. (C) 18. (C) 19. (D) 20. (C)
21. (A) 22. (B) 23. (A) 24. (D) 25. (B) 26. (C) 27. (A) 28. (D) 29. (C) 30. (C)
31. (B) 32. (B) 33. (B) 34. (A) 35. (B) 36. (B) 37. (C) 38. (D) 39. (B) 40. (D)
41. (B) 42. (A) 43. (B) 44. (A) 45. (C) 46. (D)



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